

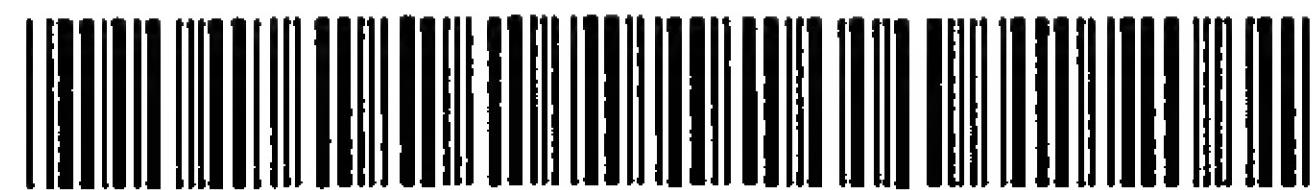


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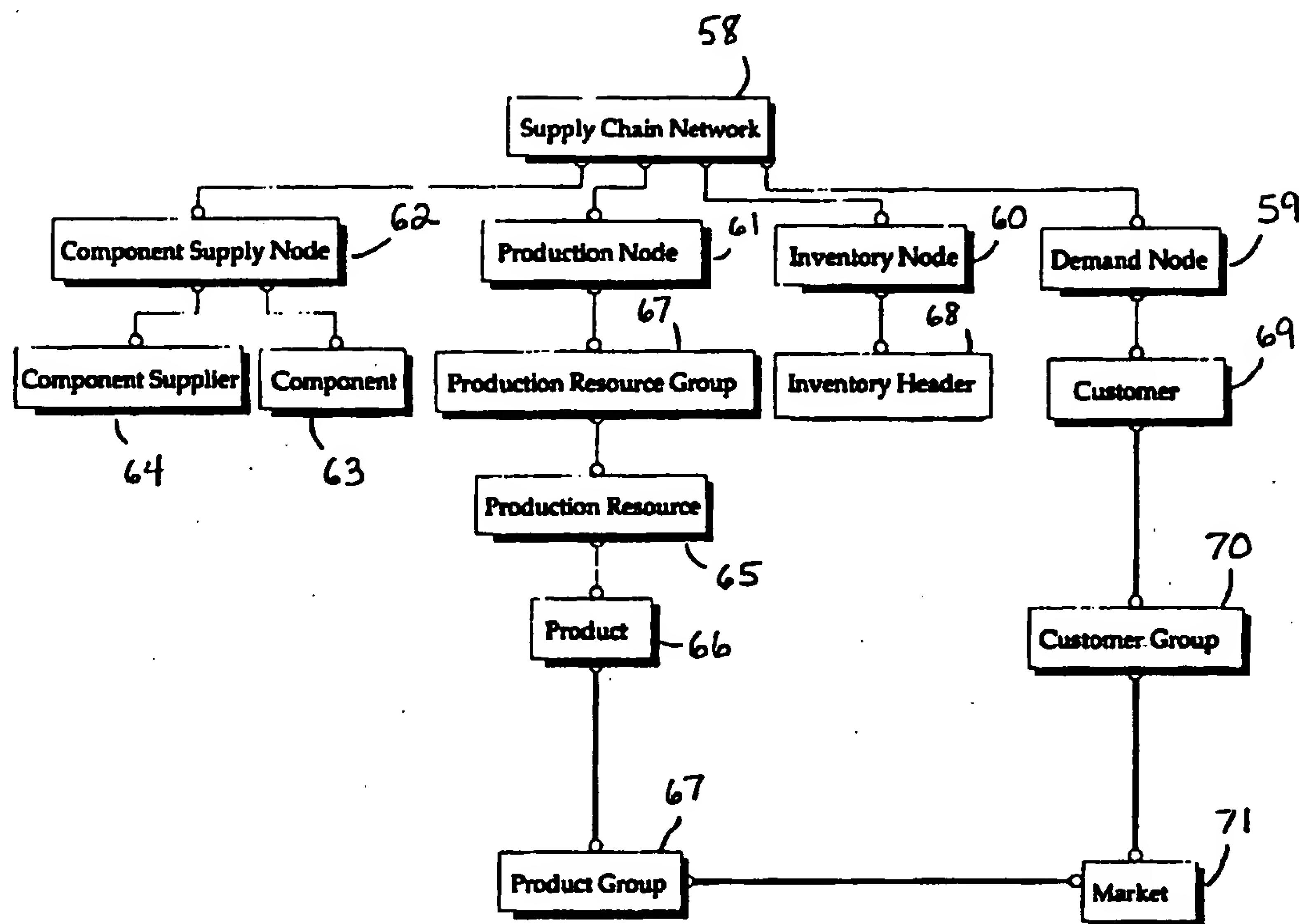
### (54) Decision support system for the management of an agile supply chain

(57) A decision support system for the management of an agile supply chain that provides an architecture including a server side and a client side. The server side includes a decision support system database that interfaces with model engine that performs analysis of the data to support planning decisions. The server side includes a server manager that coordinates requests for service and information. The client side includes decision frames that present the various view points available in the system to the users. A frame manager coordinates the requests from decision support frames to access the needed data and models. The decision support frames provide a view into supply chain and integrate analytical models responsive to the view point of a business process such as demand management. The frames include a supply management frame, a demand management frame, a vendor managed replenishment frame, a Planning, Sales and Inventory planning frame and a distribution network design frame. The model engine includes a component procurement policy development module, a finished goods distribution network design module, an aggregate production

planning module, a finished goods inventory management module, a sales forecasting and planning module, a market data analysis module, a vendor managed replenishment module and various utilities such as generic linear programming solvers and statistical analysis routines. The system also includes a demand and supply reconciliation process reconciling production, sales and inventory and reconciling a top-down forecast with a bottom-up forecast where an expert based model is used for the bottom-up forecast. A capacity planning process determines the feasibility of a capacity plan responsive to supply constraints. A vendor managed replenishment process plans inventory replenishment analysis and periods responsive to predicted sales and supply constraints. A scenario management process associated with all frames enables the user to analyze different hypothetical scenarios for comparison of business plans. The frame manager includes a system integrator and a functional integrator. A database management system manages the supply and maintenance of information needed by the modeling processes through the frame manager. A domain

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management process limits data available to said frames responsive to a user selection.



*Structural Elements in the DSS Database for the Manufacturing Supply Chain*

**FIG. 5**



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## EUROPEAN SEARCH REPORT

Application Number  
EP 96 20 2971

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
P, X	GB 2 293 902 A (I2 TECHNOLOGIES INC) 10 April 1996 * page 2, paragraph 2 - page 4, paragraph 2 * * page 6, paragraph 1 * * page 8, paragraph 2 * * page 14, paragraph 2 - page 14, paragraph 3 * * page 18, paragraph 1 - page 21, paragraph 2 * ---	1-18, 20	G06F17/60
X	ELIMAM A A : "A Decision Support System (DSS) for agricultural pesticide production planning" EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 81, no. 1, 16 February 1995, page 17-34 XP002082369 * page 17, paragraph 1 - page 19, paragraph 4 * * page 21, last paragraph - page 22, paragraph 3 * ---	1, 2, 4, 5, 7-14, 20	
Y		3, 6, 15-19, 21	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
Y	LACAZE ET AL: "C2H2F2: CASE COMPREHENSIVE HYBRID-HYBRID FORECASTING FRAMEWORK" PROCEEDINGS INRIA/IEEE SYMPOSIUM ON EMERGING TECHNOLOGIES AND FACTORY AUTOMATION, vol. 1, 10 - 13 October 1995, pages 701-701-708, XP002082141 * page 1, paragraph 1 - paragraph 4 * * page 708, paragraph 3 * ---	3, 6, 15-19, 21	G06F
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	28 October 1998	Skulikaris, I	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			



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## **EUROPEAN SEARCH REPORT**

**Application Number**

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	<p>RANDHAWA ET AL: "A decision aid for coordinating fishing and fish processing" EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 81, no. 1, 16 February 1995, pages 62-75, XP002082142</p> <p>* abstract *</p> <p>* page 62, right-hand column, last paragraph - page 63, left-hand column, paragraph 1 *</p> <p>* page 67, right-hand column, paragraph 2 - page 68, left-hand column, paragraph 1 *</p> <p>-----</p>	1, 9, 13, 20	
<p style="text-align: right;">TECHNICAL FIELDS SEARCHED (Int.Cl.6)</p>			
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	28 October 1998	Skulikaris, I	
CATEGORY OF CITED DOCUMENTS			
X	particularly relevant if taken alone	T : theory or principle underlying the invention	
Y	particularly relevant if combined with another document of the same category	E : earlier patent document, but published on, or after the filing date	
A	technological background	D : document cited in the application	
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